UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,078	06/28/2001	Harriet G. Coverston	P6607	6570

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ART UNIT	PAPER NUMBER
2171	

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No. ●	**Applicant(s)**
Office Action Summary	09/894,078	COVERSTON ET AL.
	Examiner	**Art Unit**	
	Brian Goddard	2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 January 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-54</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-54</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>28 June 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to the Request for Reconsideration filed 24 January 2004.

2.   Claims 1-54 are pending in this application. Claims 1, 19 and 37 are independent claims. No claims were cancelled, added or amended. This action is made Final.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3.   Claims 1-13, 19-31 and 37-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,490,666 to Cabrera et al. in view of U.S. Patent Application Publication No. 2001/0003829 to Romine.

Referring to claim 1, Cabrera discloses a method for managing files in a file system as claimed. See Figures 1-3 & 6-7 and the corresponding portions of Cabrera's specification for this disclosure. In particular, Cabrera teaches a method for managing files in a file system [See Figs. 1-2], wherein an application program accesses files in the file system [See Figs. 6-7], comprising:

providing a plurality of files in a primary storage [122] used by the application program;

applying a criteria [See column 1, line 52 – column 2, line 3] to determine files to

release [migrate] in the primary storage that have been copied to a secondary storage

[124];

receiving [Steps 700-701] a request [no recall request] for data from the

application program in one file that was released [NO branch from step 704] and resides

on the secondary storage; and

reading [Steps 706-722] the data from the file in the secondary storage into a

memory [120] accessible to the application program as claimed.

Cabrera does not explicitly state that data from the file in the memory is provided

to the application program before the entire file has been read from the secondary

storage into the memory as claimed. However, Cabrera does state that the purpose for

using a no recall request method is to provide the file (via streaming) to the requesting

application without recalling the entire file to disk. See column 2, lines 22-25 of

Cabrera's specification for this disclosure. Thus, Cabrera is merely silent on the

functional details of streaming the file (or portion thereof) to the requesting application,

but does provide explicit suggestion for providing data from the file in the memory to the

application program before the entire file has been read from the secondary storage.

Romine discloses a system and method similar to that of Cabrera, and

elaborates further on the functional details of streaming a file (or portion thereof) to a

requesting application program. Specifically, Romine teaches that streaming a file from

a secondary storage to an application program involves "reading the data from the file in

the secondary storage into a memory [random access memory buffer] accessible to the

application program" and "providing data from the file in the memory to the application

program before the entire file has been read from the secondary storage into the

memory" as claimed. See paragraphs 0058-0060 of Romine's specification for this

disclosure.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to implement Romine's file streaming functionality in Cabrera's

system so as to provide data from the file in the memory to the requesting application

program before the entire file is read from the secondary storage into the memory to

obtain the invention as claimed. One would have been motivated to do so because of

Cabrera's direct suggestion as discussed above.

Referring to claim 2, the system and method of Cabrera in view of Romine as

applied to claim 1 discloses the invention as claimed. See Figures 3-5 and the

corresponding portions of Cabrera's specification for this disclosure. In particular,

Cabrera's (as modified by Romine) method further comprises "storing in the primary

storage a partial version of at least one released file ["stub file" – at least one data block

buffered from the original file], wherein the partial version includes a portion of the data

[data block] in at least one released file [See column 1, lines 53-58 & the discussions of

steps 604 and 704]" as claimed.

Referring to claim 3, the system and method of Cabrera in view of Romine as

applied to claim 2 above discloses the invention as claimed. See Figures 1-3 and the

corresponding portions of Cabrera's specification for this disclosure. In particular,

Cabrera's (as modified by Romine) partial version of the file [data block] comprises a

first number of bytes [data-block-size] of the released file that is less than all the bytes in the file [See column 3, lines 48-65], further comprising receiving user input indicating the first number of bytes [user specified data-block-size] included in the partial version [data block] of the file as claimed.

Referring to claim 4, the system and method of Cabrera in view of Romine as applied to claim 2 above discloses the invention as claimed. See Figures 5-7 and the corresponding portions of Cabrera's specification for this disclosure. In particular, Cabrera (as modified by Romine) teaches the method of claim 2, as above, wherein an attribute [500 & 502] is provided for each file indicating whether the partial version of the file [data block] is maintained in the primary storage [is buffered] after the file is released, wherein the partial version is only maintained in the primary storage for those released files having the attribute indicating that the partial version is to be maintained [search_key (500) indicating a file identifier and attribute (502) indicating 'valid'] as claimed.

Referring to claim 5, the system and method of Cabrera in view of Romine as applied to claim 2 above discloses the invention as claimed. See Figures 6-7 and the corresponding portions of Cabrera's specification for this disclosure. In particular, Cabrera (as modified by Romine) teaches the method of claim 2, as above, wherein the requested data is in the partial version [is in a buffered data block (YES branch of Step 704)], further comprising reading the data from the partial version of the file in the primary storage into the memory [Step 708] to make available to the application program as claimed.

Referring to claim 6, the system and method of Cabrera in view of Romine as applied to claim 5 above discloses the invention as claimed. Again, see Figures 6-7 and the corresponding portions of Cabrera's specification for this disclosure. In particular, Cabrera (as modified by Romine) teaches the method of claim 5, as above, further comprising:

"receiving a further request [701] from the application program for data in the file that is not included in the partial version of the file [NO branch of Step 704]; and

determining [Step 706] a location in the file in the secondary storage of the further requested data, wherein reading the data from the file in the secondary storage comprises reading data from the determined location in the file in the secondary storage into the memory to make available to the application program [Steps 710-722]" as claimed.

Referring to claim 7, the system and method of Cabrera in view of Romine as applied to claim 6 above discloses the invention as claimed. See Figures 3-7 and the corresponding portions of Cabrera's specification for this disclosure. In particular, Cabrera (as modified by Romine) teaches the method of claim 6, as above, wherein data is read from the file in the secondary storage in a fixed byte length [buffer size] window [data block], and wherein reading the further requested data from the determined location in the file in the secondary storage further comprises reading enough data to fill the fixed length byte window [data block] by reading data from the partial version and the further requested data read from the determined location in the

secondary storage [Step 712], wherein the window of the data is transferred to the memory [buffer] as claimed.

Referring to claim 8, the system and method of Cabrera in view of Romine as applied to claim 1 above discloses the invention as claimed. See Figures 3-7 and the corresponding portions of Cabrera's specification for this disclosure. In particular, Cabrera (as modified by Romine) teaches the method of claim 1, as above, wherein data is read from the file in the secondary storage [Steps 706-722] in a fixed byte length [buffer size] window [data block] as claimed.

Referring to claim 9, the system and method of Cabrera in view of Romine as applied to claim 8 above discloses the invention as claimed. See Figures 6-7 and the corresponding portions of Cabrera's specification for this disclosure. In particular, Cabrera (as modified by Romine) teaches the method of claim 8, as above, wherein multiple windows [data blocks] of data are read from the file in the secondary storage into the memory [buffers] in response to the data request [for more than one data block of a file] as claimed.

Referring to claim 10, the system and method of Cabrera in view of Romine as applied to claim 8 above discloses the invention as claimed. See Figures 6-7 and the corresponding portions of Cabrera's specification for this disclosure. Cabrera (as modified by Romine) teaches the method of claim 8, as above, further comprising:

"receiving a request [Step 701] for data from the file that follows [subsequent data block] the data transferred into the memory [data block already stored to a memory buffer]; and

reading [Step 706] at least one window [data block] of further data having the

fixed byte length from the file in the secondary storage into the memory to make

available to the application program [Step 722]" as claimed.

Referring to claim 11, the system and method of Cabrera in view of Romine as

applied to claim 8 above discloses the invention as claimed. See Figures 6-7 and the

corresponding portions of Cabrera's specification for this disclosure. In particular,

Cabrera's step of reading the data into the window further comprises:

"storing [Step 712] the data read into the window [data block] in the memory

[buffer]; and

making the data from the window read into the memory available [Step 722] to

the application program before the entire window of data is read into the memory [See

the discussion regarding claim 1 above]" as claimed.

Referring to claim 12, the system and method of Cabrera in view of Romine as

applied to claim 8 above discloses the invention as claimed. See the discussion

regarding claim 3 above for the details of this disclosure. In particular, Cabrera's (as

modified by Romine) system allows a user to specify the data-block-size (size of the

fixed byte length of the window) as claimed.

Referring to claim 13, the system and method of Cabrera in view of Romine as

applied to claim 1 above discloses the invention as claimed. See Figure 5 and the

corresponding portion of Cabrera's specification for this disclosure. In particular,

Cabrera (as modified by Romine) teaches the method of claim 1, as above, wherein a

stage attribute [502] is associated with each file indicating whether to stage the file

transferred from the secondary storage to the memory into the primary storage,

comprising staging data to the primary storage [Steps 614-616] that was transferred

from the secondary storage only if the stage attribute indicates that data from the file is

to be staged as claimed.

Claims 19-31 are rejected on the same basis as claims 1-13 respectively. See

the discussions regarding claims 1-13 above for the details of this disclosure.

Claims 37-49 are rejected on the same basis as claims 1-13 respectively. See

the discussions regarding claims 1-13 above for the details of this disclosure.

4.   Claims 14-18, 32-36 and 50-54 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cabrera in view of Romine as applied to claim 1 above, and further in

view of U.S. Patent No. 6,269,431 to Dunham.

Referring to claim 14, neither Cabrera nor Romine explicitly teaches component

files of groups accessed by the application program as claimed. However, both

references teach that the files could be any type of files accessed by any type of

application program. See the Background and Summary of the Invention sections of

each reference for this disclosure.

Dunham discloses a system and method similar to those of Cabrera and Romine,

wherein the files include component files of groups [table spaces] that are accessed by

an application program [database program] as claimed. See Figure 9 and the

corresponding portion of Dunham's specification for this disclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Dunham's database program and table spaces as an application and component files of groups respectively within the system of Cabrera in view of Romine, so as to apply the method of Cabrera in view of Romine as above to a database application program using tablespace files. One would have been motivated to do so in order to allow the system to operate on a broader range of applications and file types, especially applications of common usage such as a database program.

Referring to claim 15, the system and method of Cabrera in view of Romine and Dunham as applied to claim 14 above discloses the invention as claimed. In all three systems, and thus in the combined system, the files are capable of being stored in both the primary and secondary storages as claimed. See e.g. Figures 1-2 of Cabrera and Figures 1-3 of Dunham.

Referring to claim 16, the system and method of Cabrera in view of Romine and Dunham as applied to claim 14 above discloses the invention as claimed. See Figure 9 and the corresponding portion of Dunham's specification for this disclosure. Dunham's component files, as applied to the system and method of Cabrera in view of Romine above, are capable of being released and replaced by the partial version [See relevant portions of Cabrera as well as combination above] and are included in groups [tablespaces] that are open to the application program as claimed.

Referring to claims 17 and 18, the system and method of Cabrera in view of Romine and Dunham as applied to claim 14 above discloses the invention as claimed.

See the discussion regarding claim 14 above, as well as the relevant portions of

Cabrera and Dunham's specifications for this disclosure.

Claims 32-36 are rejected on the same basis as claims 14-18 respectively, in

light of the basis for claim 19. See the discussions regarding claims 14-19 for the

details of this disclosure.

Claims 50-54 are rejected on the same basis as claims 14-18 respectively, in

light of the basis for claim 37. See the discussions regarding claims 14-18 and 37

above for the details of this disclosure.

Response to Arguments

5.   Applicant's arguments filed 24 January 2004 have been fully considered but they

are not persuasive.

Referring to applicants' remarks on pages 2-4 regarding the Section 103

rejection of the independent claims: Applicants argued that neither Romine nor

Cabrera, either alone or in combination, disclose, teach or suggest the claimed step of

"providing data from the file in the memory to the application program before the entire

file has been read from the secondary storage into the memory."

The examiner disagrees for the following reasons: First, Cabrera's silence on the

functional details of streaming a file cannot be construed as a lack of suggestion for this

claim step. Applicants have failed to consider the meaning of 'streaming' a file.

Cabrera's disclosure of streaming data from a secondary storage to an application

program is suggestion in and of itself due to the definition of file streaming. Specifically,

to stream a file from storage to an application program is to send the data from the file

in storage to a memory [e.g. dedicated buffer or RAM] accessible to the application

program, and provide data from the file in the memory to the application program before

the entire file has been read from the storage into the memory [before all the data has

been transmitted in its entirety] by definition. See the Microsoft Computer Dictionary,

Fourth Edition (© 1999) definitions of stream[1] and streaming.[2]

In other words, the final two steps of the method of applicants' independent

claims are equivalent to, if actually nothing more than, streaming data from a file in

secondary storage to an application program. Thus, Cabrera does explicitly suggest the

claimed step of "providing data from the file in the memory to the application program

before the entire file has been read from the secondary storage into the memory" by the

suggested usage of streaming.

Second, applicants' assertions towards the Romine reference focus on a small

portion of Romine's disclosure, while completely ignoring the pertinent details in the

cited portions of the specification. Contrary to applicants' assertion, Romine is not

directed to streaming data from a hard drive, wherein the data has been restored from a

backup tape drive to the hard drive. Romine is directed to streaming data from a

backup tape drive [secondary storage] to at least one buffer [memory], and from the

buffer memory to BOTH a hard drive [primary storage] and a multimedia application

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[1] **stream** *n*. Any data transmission, such as the movement of a file between disk and memory, that occurs
in a continuous flow....streams and streaming in connection to the Internet...enable users...to access
large multimedia files...and to display or play them before all the data has been transferred.
  stream *vb*. To transfer data continuously, beginning to end, in a steady flow....an application receiving a
stream must be able to save the information to a buffer in order to prevent loss of data....streaming
enables users to begin accessing and using a file before it has been transmitted in its entirety.
[2] **streaming** *n*. The process of delivering information, especially multimedia sound or video, in a steady
flow that the recipient can access as the file is being transmitted.

program. More specifically, Romine streams the file data from the backup tape drive [secondary storage] to a buffer [memory accessible to the application program (See Fig. 2)], and provides the data from the buffer [memory] to the multimedia application program before the entire file has been read from the backup tape storage to the buffer memory. This is explicitly shown in Paragraphs 0058-0059 of Romine's specification. In addition to providing the data from the buffer memory to the application program, Romine also discloses providing the same data from the buffer memory to the primary storage in Paragraph 0058.

Romine then adds, in Paragraph 0060, that the data read to the primary storage may then be provided to other application programs through another buffer memory (still while the data is streaming from the secondary storage). This appears to be the focus of applicants' arguments. However, this does not at all detract from Romine's explicit disclosure in the prior two paragraphs. Although Romine does read portions of files from the primary storage into memory, as argued by applicants, this is in addition to (not "rather than") from the secondary storage into memory as required by claim 1. Therefore, Romine does explicitly teach this claimed step, and the combination of Cabrera and Romine discloses each and every claimed element.

Referring to applicants' remarks on page 4 regarding the Section 103 rejection of dependent claims 2, 20 and 38: Applicants argued that Cabrera does not teach "storing in the primary storage a partial version of at least one released file, wherein the partial version includes a portion of the data in at least one released file" as claimed, because Cabrera's "stub file" is not a partial version of the file that was released.

The examiner disagrees for the following reasons: Again applicants have ignored the full disclosure of the reference. Cabrera's stub file is not merely a pointer to the location in secondary storage, as applicants have contended. Cabrera's stub file is represented as a buffer header, as shown in Fig. 5A. This stub file "includes a portion of the data in at least one released file [e.g. file attributes and search key" as claimed, in addition to the pointer to the location in secondary storage. Thus, Cabrera's stub file, or buffer header, is a partial version of at least one released file as claimed.

Referring to applicants' remarks on pages 4-6 regarding the Section 103 rejection of dependent claims 14-18, 32-36 and 50-54: Applicants argued that Dunham fails to disclose "storing in the primary storage a partial version of each released component file."

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bdg
22 April 2004

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